1. (10 points)

Draw a complete Lewis dot structure for the following compound.

\[ \text{H}_3\text{CCH}_2\text{CH}_2\text{CH}_2\text{NH}_2 \]

2. (10 points)

Use the VSEPR model to predict the molecular structure of boron trichloride.

3. (10 points)

What would be a good solvent (water, a polar organic solvent, or a nonpolar organic solvent) to dissolve the following compound? State your reasoning clearly.

\[ \text{H}_3\text{CCH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3 \]
4. (10 points)

Are the following two structures different compounds or are they resonance structures of an identical compound?

\[
\begin{align*}
\text{H}_2\text{C} & \equiv \text{C} \equiv \text{H} & \text{H}_2\text{C} & \equiv \text{C} \equiv \text{H} \\
\text{H} & \quad \text{H} & \quad \text{+} & \quad \text{CH}_2 & \quad \text{Cl}^- \\
\text{H} & \quad \text{H} & \quad \text{+} & \quad \text{CH}_2 & \quad \text{Cl}^- \\
\end{align*}
\]

5. (10 points)

Consider the following compound. State which bonds are covalent and which are ionic.

\[
\begin{align*}
\text{H}_3\text{CNH}_3 & \quad \text{+} & \quad \text{Cl}^- \\
\end{align*}
\]